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Hypothetically, your patient brings in a bag of medications he is taking. You look at the expiration dates when he says, "I guess I have to throw these out now and buy new ones."

No, he does not necessarily have to discard all those dated meds. According to Joel Davis, former FDA expiration-date compliance chief, "most drugs degrade very slowly. In all likelihood, you can take a product you have at home and keep it for many years, especially if it's kept in the refrigerator."<sup>1</sup> (an important factor in Hawaii, Ed.)

Notable exceptions include nitroglycerine, insulin and some liquid antibiotics. Topical products like creams, ointments, solutions and gels may also be exceptions.

A Medline search for adverse reactions to outdated drugs found only one report. In 1963 a reversible "Fanconi Syndrome" caused by degraded tetracycline was reported in three patients.<sup>2</sup> The syndrome of reduced renal function, acidosis, proteinuria glycosuria and aminoaciduria was found in a 54-year-old widow of a physician and a 13 year-old girl and boy. All three recovered. It was proposed that a degradation product of tetracycline, perhaps epianhydrotetracycline or anhydrotetracycline was the probable etiologic factor.

Considering the vast amount of tetracycline and tetracycline-related products that have been prescribed over the past forty years since this paper, no other reports of adverse reactions have been published.

The Medline search performed by the Reference Section of the Hawaii Medical Library did find several Letters to the Editor (some of them anonymous) and articles dealing with policies pertaining to expired drugs in diverse publications including *Advances for Nurse Practitioners*, *Journal of the American Veterinary Medical Association*, *Australian Veterinary Journal* and one in the *American Journal of Hospital Pharmacy* entitled "Expired Drugs are not Dead Drugs."<sup>3</sup>

## The Air Force and more than One Billion Dollars of Stockpiled Drugs

In 1981, in order to increase readiness, the US military bought large quantities of drugs and medical devices. The General Accounting

# Do All Drugs have to be Destroyed at the Expiration Date?

Office audited Air Force hospitals in Europe and found many supplies had expired or were near expiration. The GAO warned that by the 1990s more than one hundred million dollars would be required yearly for replacement.

The FDA, at the request of the Air Force Surgeon General's Office, started a study in 1985 with 58 medicines from 137 different marketing lots including penicillin, Lidocaine and Lactated Ringer's Solution. After testing, the FDA extended more than 80% of the expired lots by an average of 33 months. In 1992, more than half of the expired drugs that had been tested in 1985 were still effective.

So why not enable the use of medicines after the expiration date? Some claim newer, more beneficial drugs can be brought on the market more easily if the old ones are discarded after a few years. Pharmaceutical companies do not agree with this premise.

Mark van Arandonk, senior director for pharmaceutical development at Pharmacia & Upjohn Inc. said that "two to three years gives us enough time to put inventories in warehouses, ship and ensure it will stay on shelves long enough to get used."<sup>1</sup>

Because of the emphasis on discarding expired medications, some underdeveloped countries are refusing to accept perfectly safe and effective drugs. The problem of expiration dates on drugs should be a point in the prescription drug plan before Congress at this time. Congress needs input not just from the pharmaceutical companies, researchers and pharmacists. It needs to hear from you, the practicing physician. Expired medicines are not dead. Let's not bury them, but put them to good use.

## References

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